

IN THE CLAIMS:

1. (Original) In a method for forming a porous silica film using a hydrolyzable alkoxysilane compound, water, an alcohol and a surfactant and acidic or alkaline catalyst, the method for forming a porous silica film, ~~which comprises using~~ comprising:

acid hydrolysis or alkaline hydrolysis of the hydrolysable alkoxysilane compound,
utilizing one or more kinds of nonionic surfactant(s) having a 0.1 weight % concentration according to the Du Nouy method expression and a surface tension of 45 mN/m or larger at 25°C as the surfactant,

coating a mixed solution obtained by mixing the nonionic surfactant, the alkoxysilane compound, water and the alcohol on a substrate,

and decomposing or burning out the surfactant in the mixed solution, and
wherein said hydrolyzable alkoxysilane compound is from 0.05 to 0.5 mole of a dimethyldialkoxysilane compound represented by $\text{Si}(\text{CH}_3)_2(\text{OR})_2$ where a substituent R denotes a methyl group or an ethyl group.

2. (Currently Amended) The method for forming a porous silica film according to claim 1, wherein the nonionic surfactant comprises a polyoxyethylene-polyoxypropyl-ene condensate represented by ~~[Chemical formula 1]~~
 $\text{OH}(\text{CH}_2\text{CH}_2\text{O})_x(\text{CH}(\text{CH}_3)\text{CH}_2\text{O})_y(\text{CH}_2\text{CH}_2\text{O})_x\text{H}$ where ~~[Chemical formula 1]~~ (In a rational formula ~~[Chemical formula 1]~~, x and y denote an integer satisfying $1 \leq x \leq 185$ and $5 \leq y \leq 70$, respectively.) respectively.

3. (Currently Amended) The method for forming a porous silica film according to claim 2, wherein a mixing ratio in the mixed solution is 8 to 50 mole of the water, and 0.1 to 0.5 mole of the polyoxyethylene-polyoxypropylene condensate represented by $\text{OH}(\text{CH}_2\text{CH}_2\text{O})_x(\text{CH}(\text{CH}_3)\text{CH}_2\text{O})_y(\text{CH}_2\text{CH}_2\text{O})_x\text{H}$ ~~[Chemical formula 1]~~ relative to 1 mole of the alkoxysilane compound.

4. (Canceled)

5. (Currently Amended) The method for forming a porous silica film according to any one of claims 1 to 3 ~~[[4]]~~, wherein a mixed surfactant obtained by mixing a cationic ~~or nonionic surfactant~~ into the nonionic surfactant is used as the surfactant.

6. (Currently Amended) The method for forming a porous silica film according to any one of claims 1 to 3 ~~[[4]]~~, wherein a worm-hole porous structure can be observed by a sectional transmission electron microscope in a silica film formed by decomposition or burning out the surfactant.

7. (Original) The method for forming a porous silica film according to claim 5, wherein a worm-hole porous structure can be observed by a sectional transmission electron microscope in a silica film formed by decomposition or burning out the surfactant.